

1: USAAF unit identification aircraft markings - Wikipedia

Practical Radio, Item Preview remove-circle The Loose-Coupler and Its Symbol 93 Inductance Illustrated with a Loose-Coupler 95 The Vario-Coupler

The last of the symbols, depending for its existence on its connection with a myth to which I shall invite attention, is the Lost Word, and the search for it. Very appropriately may this symbol terminate our investigations, since it includes within its comprehensive scope all the others, being itself the very essence of the science of masonic symbolism. The other symbols require for their just appreciation a knowledge of the origin of the order, because they owe their birth to its relationship with kindred and anterior institutions. But the symbolism of the Lost Word has reference exclusively to the design and the objects of the institution. First, let us define the symbol, and then investigate its interpretation. The mythical history of Freemasonry informs us that there once existed a WORD of surpassing value, and claiming a profound veneration; that this Word was known to but few; that it was at length lost; and that a temporary substitute for it was adopted. But as the very philosophy of Masonry teaches us that there can be no death without a resurrection,--no decay without a subsequent restoration,--on the same principle it follows that the loss of the Word must suppose its eventual recovery. Now, this it is, precisely, that constitutes the myth of the Lost Word and the search for it. No matter what was the word, no matter how it was lost, nor why a substitute was provided, nor when nor where it was recovered. These are all points of subsidiary importance, necessary, it is true, for knowing the legendary history, but not necessary for understanding the symbolism. The only term of the myth that is to be regarded in the study of its interpretation, is the abstract idea of a word lost and afterwards recovered. This, then, points us to the goal to which we must direct our steps in the pursuit of the investigation. But the symbolism, referring in this case, as I have already said, solely to the great design of Freemasonry, the nature of that design at once suggests itself as a preliminary subject of inquiry in the investigation. What, then, is the design of Freemasonry? A very large majority of its disciples, looking only to its practical results, as seen in the every-day business of life,--to the noble charities which it dispenses, to the tears of widows which it has dried, to the cries of orphans which it has hushed, to the wants of the destitute which it has supplied,--arrive with too much rapidity at the conclusion that Charity, and that, too, in its least exalted sense of eleemosynary aid, is the great design of the institution. Others, with a still more contracted view, remembering the pleasant reunions at their lodge banquets, the unreserved communications which are thus encouraged, and the solemn obligations of mutual trust and confidence that are continually inculcated, believe that it was intended solely to promote the social sentiments and cement the bonds of friendship. But I have shown that the Primitive Freemasonry of the ancients was instituted for the purpose of preserving that truth which had been originally communicated to the patriarchs, in all its integrity, and that the Spurious Masonry, or the Mysteries, originated in the earnest need of the sages, and philosophers, and priests, to find again the same truth which had been lost by the surrounding multitudes. I have shown, also, that this same truth continued to be the object of the Temple Masonry, which was formed by a union of the Primitive, or Pure, and the Spurious systems. Lastly, I have endeavored to demonstrate that this truth related to the nature of God and the human soul. The search, then, after this truth, I suppose to constitute the end and design of Speculative Masonry. God and the soul--the unity of the one and the immortality of the other--are the great truths, the search for which is to constitute the constant occupation of every Mason, and which, when found, are to become the chief corner-stone, or the stone of foundation, of the spiritual temple--"the house not made with hands"--which he is engaged in erecting. Now, this idea of a search after truth forms so prominent a part of the whole science of Freemasonry, that I conceive no better or more comprehensive answer could be given to the question, What is Freemasonry? But Freemasonry is eminently a system of symbolism, and all its instructions are conveyed in symbols. It is, therefore, to be supposed that so prominent and so prevailing an idea as this,--one that constitutes, as I have said, the whole design of the institution, and which may appropriately be adopted as the very definition of its science,--could not with any consistency be left without its particular symbol. The WORD, therefore, I conceive to be the symbol of Divine Truth; and all its modifications--the loss, the substitution, and the

recovery--are but component parts of the mythical symbol which represents a search after truth. How, then, is this symbolism preserved? How is the whole history of this Word to be interpreted, so as to bear, in all its accidents of time, and place, and circumstance, a patent reference to the substantive idea that has been symbolized? The answers to these questions embrace what is, perhaps, the most intricate as well as most ingenious and interesting portion of the science of masonic symbolism. This symbolism may be interpreted, either in an application to a general or to a special sense. The general application will embrace the whole history of Freemasonry, from its inception to its consummation. The search after the Word is an epitome of the intellectual and religious progress of the order, from the period when, by the dispersion at Babel, the multitudes were enshrouded in the profundity of a moral darkness where truth was apparently forever extinguished. The true name of God was lost; his true nature was not understood; the divine lessons imparted by our father Noah were no longer remembered; the ancient traditions were now corrupted; the ancient symbols were perverted. Truth was buried beneath the rubbish of Sabaism, and the idolatrous adoration of the sun and stars had taken the place of the olden worship of the true God. A moral darkness was now spread over the face of the earth, as a dense, impenetrable cloud, which obstructed the rays of the spiritual sun, and covered the people as with a gloomy pall of intellectual night. But this night was not to last forever. A brighter dawn was to arise, and amidst all this gloom and darkness there were still to be found a few sages in whom the religious sentiment, working in them with powerful throes, sent forth manfully to seek after truth. There were, even in those days of intellectual and religious darkness, craftsmen who were willing to search for the Lost Word. And though they were unable to find it, their approximation to truth was so near that the result of their search may well be symbolized by the Substitute Word. It was among the idolatrous multitudes that the Word had been lost. It was among them that the Builder had been smitten, and that the works of the spiritual temple had been suspended; and so, losing at each successive stage of their decline, more and more of the true knowledge of God and of the pure religion which had originally been imparted by Noah, they finally arrived at gross materialism and idolatry, losing all sight of the divine existence. Thus it was that the truth--the Word--was said to have been lost; or, to apply the language of Hutchinson, modified in its reference to the time, "in this situation, it might well be said that the guide to heaven was lost, and the master of the works of righteousness was smitten. The nations had given themselves up to the grossest idolatry, and the service of the true God was effaced from the memory of those who had yielded themselves to the dominion of sin. These were the craftsmen who saw the fatal-blow which had been given, who knew that the Word was now lost, but were willing to go forth, manfully and patiently, to seek its restoration. And there were the craftsmen who, failing to rescue it from the grave of oblivion into which it had fallen, by any efforts of their own incomplete knowledge, fell back upon the dim traditions which had been handed down from primeval times, and through their aid found a substitute for truth in their own philosophical religions. And hence Schmidt, speaking of these Mysteries of the pagan world, calls them the remains of the ancient Pelasgian religion, and says that "the associations of persons for the purpose of celebrating them must therefore have been formed at the time when the overwhelming influence of the Hellenic religion began to gain the upper hand in Greece, and when persons who still entertained a reverence for the worship of former times united together, with the intention of preserving and upholding among themselves as much as possible of the religion of their forefathers. But I have said that there is a special, or individual, as well as a general interpretation. This compound or double symbolism, if I may so call it, is by no means unusual in Freemasonry. Now, in this special or individual interpretation, the Word, with its accompanying myth of a loss, a substitute, and a recovery, becomes a symbol of the personal progress of a candidate from his first initiation to the completion of his course, when he receives a full development of the Mysteries. The aspirant enters on this search after truth, as an Entered Apprentice, in darkness, seeking for light--the light of wisdom, the light of truth, the light symbolized by the Word. For this important task, upon which he starts forth gropingly, falteringly, doubtfully, in want and in weakness, he is prepared by a purification of the heart, and is invested with a first substitute for the true Word, which, like the pillar that went before the Israelites in the wilderness, is to guide him onwards in his weary journey. He is directed to take, as a staff and scrip for his journey, all those virtues which expand the heart and dignify the soul. Secrecy, obedience, humility, trust in God, purity of conscience, economy of time, are all

inculcated by impressive types and symbols, which connect the first degree with the period of youth. And then, next in the degree of Fellow Craft, he fairly enters upon his journey. Youth has now passed, and manhood has come on. New duties and increased obligations press upon the individual. The thinking and working stage of life is here symbolized. Science is to be cultivated; wisdom is to be acquired; the lost Word--divine truth--is still to be sought for. But even yet it is not to be found. And now the Master Mason comes, with all the symbolism around him of old age--trials, sufferings, death. And here, too, the aspirant, pressing onward, always onward, still cries aloud for "light, more light. So, the Master Mason, receiving this substitute for the lost Word, waits with patience for the time when it shall be found, and perfect wisdom shall be attained. The corruptions of mortality, which encumber and cloud the human intellect, hide it, as with a thick veil, from mortal eyes. It is only, as I have just said, beyond the tomb, and when released from the earthly burden of life, that man is capable of fully receiving and appreciating the revelation. Hence, then, when we speak of the recovery of the Word, in that higher degree which is a supplement to Ancient Craft Masonry, we intimate that that sublime portion of the masonic system is a symbolic representation of the state after death. For it is only after the decay and fall of this temple of life, which, as masons, we have been building, that from its ruins, deep beneath its foundations, and in the profound abyss of the grave, we find that divine truth, in the search for which life was spent, if not in vain, at least without success, and the mystic key to which death only could supply. And now we know by this symbolism what is meant by masonic labor, which, too, is itself but another form of the same symbol.

2: Loose coupling - Wikipedia

93/93 is also used as a signature line, translated as: Do what thou wilt shall be the whole of the Law. Love is the Law, love under Will. Why It Is Used. The reasons for 93 being used in most online correspondences do not necessarily compliment the meaning of

Rare Earth Elements Crystal Structure- The term "Crystal Structure" refers to the way in which the atoms are arranged within an a substance element. This property explains the way an element cleaves, or breaks apart physically. For example, an element with a cubic crystal structure, such as aluminum Al , will break into cubes. Each side of the cube should have a straight edge. Density- The density of an element refers to how closely its atoms are packed together. This is measured in grams per cubic centimeter. Take, for example, magnesium Mg. Its density at degrees Kelvin 20 degrees Celsius, 67 degrees Fahrenheit is 1. This means that if you have a block of magnesium at room temperature Kelvin , and you decide to cut a cube measuring 1 x 1 x 1 cm, the mass that you will cut will be 1. The greater the density of an element is, the "heavier" the element is. Color- The color of an element refers to its physical reflection of light under normal conditions. For example, tin Sn , will have a white color at room temperature. These properties may change if tin was heated to its melting point, where it would become a liquid, or if it was shown under a light with a color other than white. Other Names- Some elements have more than one name or spelling. This may be caused by either local spelling or a naming dispute. For example, the element aluminum Al is spelled aluminum in the United States, but is spelled and pronounced aluminium in most other English-speaking countries, including Great Britain, Canada, and Australia. Until this naming dispute is resolved, this periodic table will use the systematic Latin names automatically assigned to newly discovered elements. More information about the naming of heavy elements is available. Atomic Structure Number of Energy Levels- The number of energy levels refers to how many "electron shells" or places where electrons can be an element has. An element with 4 shells, such as zinc Zn , has 4 different areas where an electron is likely to be found. Electron Arrangement- The electron arrangement of an atom refers to the number of electrons in each energy level. For example, carbon C has 6 electrons. Its atom arrangement shows that the six electrons are divided up into two shells, with 2 and 4 electrons, respectively. Electron Configuration- The electron arrangement described above can be further described to include information about orbitals, shells, and more. This explanation is beyond the scope of this document, but if you are already aware of what these numbers mean, they are provided here for you. Bohr Models- On this periodic table, Bohr models are now available for all known elements. These models are designed to give some idea of how the electrons are spread over the energy levels. However, the Bohr model is now considered inaccurate among most scientists. This is because Bohr models show that electrons travel on specific paths or orbitals, a theory which has now been replaced by one that states that an electron has a greater probability of being in a certain area or "energy level" of the atom. Half Lives Half Lives- Half lives are defined as being the average time it takes for half of the atoms of a radioactive element to decay into their daughter elements. For example, carbon an isotope of carbon used for dating fossils has a half life of years. Some elements, especially the heavier ones, have half lives of just a few milliseconds. For example, ununbium Uub has a half-live of just milliseconds. Facts Date of Discovery- The date of discovery of any element refers to the year in which is was first isolated and identified as an element. Some elements were discovered by early civilizations, and have an unknown discovery date. Discoverer s - The discoverer of an element is defined as the first person to have identified the element. In more recent years, teams of scientists have been working on the identification of new elements, allowing more than one name to be put in this field. Some elements have been assigned names of famous scientists, important mythological characters, or places. Symbol Origin- When the chemical symbol of an element does not correspond to its name, its symbol origin is given on this periodic table. For example, the element lead has the chemical symbol "Pb". The symbol origin is from the Latin word "plumbum", which means "lead". Obtained from- The method of obtaining an element is also given under this section. Some elements are obtained from minerals, others are obtained from methods such as electrolysis of a mineral, while others are man-made. I do not require that you use any particular format for citing these pages,

but the MLA style is the most common one used in K school and some colleges. To cite this page, for example, you would use: Where you see " ", substitute the date you accessed the site, if it is not correct. If this citation exceeds one line, you will need to use a hanging indent every line but the first. More information about citing online sources using the MLA format can be found at <http://> An isotope is an atom of any element with the same number of protons and electrons as all the other atoms of this particular element, but with a different atomic mass and number of neutrons.

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Sirroco What Is 93? People who follow Thelemic Paths base much of their information on the works of Aleister Crowley. Crowley believed he had received messages that he was a new messiah, and was to create a new religion called Thelema. Thelema, or Will is expressed as: Do what thou wilt shall be the whole of the Law. Agape, or Love is expressed as: Love is the law, love under will. These two phrases are the Law of Thelema. Do what thou wilt shall be the whole of the Law The person being greeted then says the Agape part in response: These phrases can also be used as greetings and farewells, the greeting being Thelema, and the parting being agape. Both phrases are abbreviated by the number 93. The sum of the values of the letters in the word Thelema total 93. Also, the sum of the values of the letters in the word agape total 93. From this greeting developed the abbreviation for written correspondences, 93. This can be somewhat paralleled with the Pagan greeting "Merry Meet" being abbreviated to mm, and "Merry Part" being abbreviated to mp. However, 93 goes far beyond a greeting, it is a statement of the Law of Thelema, and from a Wiccan perspective can be somewhat roughly compared to a Wiccan stating the Rede in greeting and passing. So what response do you give to 93? If you sincerely follow the Thelemic path, you would reply 93 or "Love is the law, love under will. Dear Sir, Do what thou wilt shall be the whole of the Law. Love is the Law, love under Will. Why It Is Used The reasons for 93 being used in most online correspondences do not necessarily compliment the meaning of After cornering many dozens of people in chat rooms and through email who have used 93 as an introductory greeting, most simply say they use it because it is like the "secret club handshake. Unfortunately, for some it is a way to feel superior, powerful, and knowledgeable. However, there is a small percentage of people who do know what it means when they use it. Much like Druidic orders, knowledge, wisdom and seeking are very high priorities for those traveling Thelemic paths. We must respect those who are willing to put forth the effort, are smart enough to not get caught up in power plays and intentionally convoluted or drug induced writings which may apply in the case of Crowley , and sincere enough to really make progress on these paths. Most importantly, we must respect these few for having to deal with those who use or abuse 93 without knowing its deeper meaning. Many Pagans are turned off by the hierarchical division of spiritual levels within the Golden Dawn and related paths. These hierarchical divisions extend to both members in groups, and to energies in other realms. Many Pagans are also turned off by the Judeo-Christian overtones they perceive in these paths, as well as the frequent patriarchal attitudes. However, as Pagans, particularly Wiccans and Witches, we owe a great deal to the magickal progress made through Thelema and the Golden Dawn, as well as the experimentation done by Crowley. Some Pagan traditions draw heavily on the works of Crowley, the Golden Dawn and other magickal orders, some not at all, and some do so without even knowing the origins of their philosophies. Throughout the Members Area, we strive to show you the origins of all aspects of Paganism so you can develop your own path according to what you feel comfortable with. Furthering Your Studies Thelemic Order of the Golden Dawn Further study of the following topics will reveal more regarding the number

4: Chemical www.enganchecubano.com - Niobium (Nb)

ment, its name and the schematic symbol representing it, will be found on the back of this instruction leaflet. You will note that there is a certain definite reason for.

It is mounted on a ceramic base and the tips are made of zinc. Zinc was supposed to produce a very clear "spark tone" - certainly a relative statement of the "spark days. These "stationary gaps" were used in spark transmitters where the source of the charging voltage was a "spark coil. It was also possible to use electro-chemical interrupters along with a high voltage transformer, however, most transformer operated stations used rotary gaps, like those shown next. Rotary Spark Gap No. The Klitzen Micaoil Sending Condenser is. The condenser uses mica as a dielectric and oil for insulation along with cooling. These components would have been used along with an oscillation transformer in a transformer-energized spark transmitter to provide the spark gap and the capacitance necessary for damped wave signal generation. Using a rotary gap in the secondary circuit gave the advantage of audio frequency modulation. This was accomplished by allowing the gap discharge to occur at various random levels of the charging AC voltage non-synchronous rotary gap. The varying discharge voltage and resultant different amplitude peak of the damped waves in each wave train was heard as an audible tone allowing better copy. The approximate audio frequency can be calculated by dividing the motor RPM by 60 and multiplying by the number of discharge contacts, 12 in the case of the Klitzen. Apparently other parts houses offered the Klitzen under their own name since there are no tags or embossing to provide a way to identify the actual manufacturer. Franklin was one such parts house that offered the Klitzen No. Commercial-Homebrew Rotary Spark Gap. Many wireless parts houses offered various components to build your own equipment, called "homebrewing. Actually, the oak base looks too good to be amateur construction but some of the incredibly talented hams of that time were certainly capable of building the entire apparatus. The insulated pieces are made out of hard rubber and the metal parts are nickel-plated brass, which seems to imply a commercial source for these parts. It appears that this rotary gap was probably belt-driven. It might be possible that the belt drove the shaft directly, or, more likely the sheave pulley has been removed from the shaft. There are no indications that a motor was mounted to the oak base, therefore some other means was used to drive the disk. To produce a suitable "tone" this rotary gap would have to turn at a very high RPM since all of the contacts on the wheel are commonly connected and the dual stationary gaps would have been connected in series thus given six "breaks per revolution. He was only 11 at the time but he was able to construct quite a nice Loose Coupler using the oak boards from a discarded bed frame. The spark coil is a 1" Commercial and the sending condenser is homebrew using glass and foil. Spark was certainly on the way out by but John was able to make a few contacts and hone his ham skills. John became SK in January at the age of 11. Two sets of earphones can be used with this set - the two sets of "TEL" terminals are connected in parallel. The large contact switch tunes the primary coil by selecting the number of turns. The secondary turns are selected by the contact switch on the front of the secondary coil form. A fixed condenser is located under the board. Dates from around to 1915. Dating the Audion Receiver to was arrived at by noting that the circuit is non-regenerative - regeneration became popular in 1915. Also, "dead-turns" unused sections of tapped inductors are not grounded - this was commonly done by 1915. Additionally, the spherical audions were being replaced by tubular audiotrons by 1915. The approximate date of seems likely for this receiver. The circuit uses a Loose Coupler tuner and a non-regenerative, grid-leak detector. On the lower right side of the panel is a dual control the outer knob of which varies the coupling via a bell crank while the inner knob selects the secondary turns. Another clever control is the large antenna tuning series condenser - if it is rotated to either end of its scale and the metal pointer put into contact with the stop pins, the condenser is then shorted and essentially taken out of the circuit. The back-up crystal detector was added at a later date. This was a common addition as it allowed the receiver to still be used if batteries were depleted or the audion failed. The cabinet is mahogany and the panel is. Signals picked up on this receiver are either weak or inaudible! Regeneration would have been a big help but even the commercial regen sets were at least a year away, Paragon RA. This working receiver was tested using several different kinds of detector tubes by way of a homemade adaptor. The best

performance was using a Moorhead ER type tube, though these are vintage tubes. The sensitivity was a bit better than a modern germanium diode. Hazeltine was a Stevens Institute graduate and then subsequently became an instructor there. The design request came from a former Hazeltine student who was now in charge of receiver development at the Washington Navy Shipyard. The Navy wanted a receiver that was capable of operation in the presence of nearby spark and arc transmitters. Hazeltine achieved this selectivity by using a sophisticated Antenna Tuner that was completely shielded and only coupled to the Secondary Tuner by a small variable coupling coil. Wavelengths covered were from meters to about meters. The entire cabinet is lined inside with copper sheet with an additional copper shield to provide complete isolation between the Antenna Tuner section and the Secondary Tuner circuit resulting in great selectivity and immunity to interference. This complete shielding also eliminated stray pickup. SE type receivers were built by various contractors though most of the s. There were several variations and upgrades to the receivers, some with different frequency coverage but the same basic style is easily recognized. The various end users were the Navy, the Army and the Coast Guard. In , armed with new detailed information, I replicated the socket and completed the SE restoration. Although the restoration used several replica and non-original parts, authentic vintage material and techniques were utilized in the rebuilding of the receiver. More details on the restoration and performance in our web article. Later, in , the DA-2 detector and two-stage audio amplifier became available. Godley redesigned the tuner using a variable condenser in the secondary circuit and a variometer in the plate circuit and this became the RA Adams-Morgan took full advantage of the advertising potential of the Tests claiming the Paragon had received all of the ham stations. Upon his return to the USA, Godley made an off-hand comment about the 50 watt vacuum tube oscillators out-performing the 1KW spark stations that probably put the death-knell to spark, at least as far as the hams were concerned. Using a DeForest type tuner can be very annoying because the location of the adjusting knobs requires the operator to reach over the coils. The hand capacity involved in making adjustments de-tunes the receiver resulting in temporary settings that change soon as the hand is removed. Most operators would use a pencil to push the coils into the proper adjustment instead. Three-circuit tuners are difficult to operate correctly but can provide excellent sensitivity and selectivity. The Grebe CR-5 is a single-circuit tuner with a regenerative detector that uses a UV soft detector tube. The CR-5 tunes from meters down to meters, or, kc up to kc. The CR-9 is also a single-circuit tuner with regenerative detector but also included in the circuit is a two-stage audio amplifier. This allowed the purchaser to have a complete receiver that was able to drive a loudspeaker. The CR-9 is shown below. Regulations had all BC stations on meters or meters, so the CR-9 could successfully receive these types of stations. Grebe did market the CR-9 as a BC receiver for a while and sold thousands of them. Since a pure-tungsten filament, argon gas filled detector tube is used in the Grebe CR receivers, when setting up the receivers, a method of adjusting the detector plate voltage will be advantageous. In the early twenties, a plate potentiometer was used that allowed varying the detector voltage by about six volts the potential of the A battery usually. There is interaction between the filament voltage, the detector plate voltage and the regeneration control, so having the plate voltage adjustable generally means you can set the detector filament voltage and leave it alone. To achieve maximum selectivity with a single-circuit tuner, the regeneration must be just before or just after the oscillation point. For AM voice transmissions, just before oscillation will provide best sensitivity and best selectivity. For CW, just after the oscillation point also provides best performance. Kennedy - Type - Intermediate Wave Receiver Kennedy receivers were the favorites of experimenters, radio enthusiasts and some hams. There were some commercial users, especially early broadcast stations where the receivers were used as emergency frequency monitors required by early regulations. Kennedy receivers were built to a high quality standard which meant a high selling price. It tunes from meters to about meters, or about kc up to kc, using a three-circuit tuner operating a regenerative detector. Early versions will have a Plate Potentiometer adjustment for controlling the plate voltage on the detector tube. The standard detector tube used was a soft-detector, the UV The amplifier used hard-amplifier tubes, the UV Kennedy receivers are usually described by the location of manufacture which was a chronological event and resulted in slightly different construction of the receivers. Early Kennedy receivers built in San Francisco will have nickel plated binding posts and plate potentiometers while later St. Louis versions have bakelite

capped binding posts and no plate potentiometer. There are many other variations between the two versions and almost any example will differ from another in some small detail. This was due to the way that Kennedy equipment was built - all hand made. Though machines were used to make the various parts, since the machines were operated by hand, the resulting parts do have variations. Top quality was apparent with the silver plated dials on Formica panels that were machine engraved, all housed in a solid walnut cabinet. Kennedy history and history of each receiver, operation of the equipment, restoration suggestions and interior photos of the equipment plus an article on Dr. Kennedy - "Radio Apparatus of Quality" in the navigation index below. Kennedy was usually a builder of high quality home radios but if you were an affluent ham or experimenter, you might want to buy a Type shortwave receiver with its matching Type Two-Stage Audio Amplifier for your station. Using a standard Armstrong three circuit regenerative tuner, the tunes from about meters to about meters, or about kc up to kc. Most amateur operation in the early twenties was on meters kc and up. The set uses a soft-detector UV and the amp uses two hard-amplifiers UV tubes.

5: Full text of "Practical Radio, "

variometer, varÃ-e -coupler and loose -coupler depend. In 8. RADIO HOOK-UPS so that he can compare it to its line symbol. For this.

Components in a loosely coupled system are less constrained to the same platform, language, operating system, or build environment. If systems are decoupled in time, it is difficult to also provide transactional integrity ; additional coordination protocols are required. Data replication across different systems provides loose coupling in availability , but creates issues in maintaining consistency data synchronization. In integration[edit] Loose coupling in broader distributed system design is achieved by the use of transactions, queues provided by message-oriented middleware , and interoperability standards. Enterprise Service Bus ESB middleware was invented to achieve loose coupling in multiple dimensions; [5] however, overengineered and mispositioned ESBs can also have the contrary effect and create undesired tight coupling and a central architectural hotspot. Event-driven architecture also aims at promoting loose coupling. Loose coupling between program components can be enhanced by using standard data types in parameters. Passing customized data types or objects requires both components to have knowledge of the custom data definition. Loose coupling of services can be enhanced by reducing the information passed into a service to the key data. For example, a service that sends a letter is most reusable when just the customer identifier is passed and the customer address is obtained within the service. This decouples services because services do not need to be called in a specific order e. Loose coupling of application integration in business process automation contexts can be increased by following a presentation layer integration model in which automation applications interact with underlying automated applications through the presentation layer or graphical user interface. In programming[edit] Coupling refers to the degree of direct knowledge that one component has of another. Loose coupling in computing is interpreted as encapsulation vs. An example of tight coupling occurs when a dependent class contains a pointer directly to a concrete class which provides the required behavior. The dependency cannot be substituted, or its "signature" changed, without requiring a change to the dependent class. Loose coupling occurs when the dependent class contains a pointer only to an interface, which can then be implemented by one or many concrete classes. Any class that implements the interface can thus satisfy the dependency of a dependent class without having to change the class. This allows for extensibility in software design; a new class implementing an interface can be written to replace a current dependency in some or all situations, without requiring a change to the dependent class; the new and old classes can be interchanged freely. Strong coupling does not allow this. This is a UML diagram illustrating an example of loose coupling between a dependent class and a set of concrete classes, which provide the required behavior: For comparison, this diagram illustrates the alternative design with strong coupling between the dependent class and a provider: Other forms[edit] Computer programming languages having notions of either functions as the core module see Functional programming or functions as objects provide excellent examples of loosely coupled programming. Functional languages have patterns of Continuations , Closure , or generators. See Clojure and Lisp as examples of function programming languages. Object-oriented languages like Smalltalk and Ruby have code blocks, whereas Eiffel has agents. The basic idea is to objectify encapsulate as an object a function independent of any other enclosing concept e. See First-class function for further insight into functions as objects, which qualifies as one form of first-class function. So, for example, in an object-oriented language, when a function of an object is referenced as an object freeing it from having any knowledge of its enclosing host object the new function object can be passed, stored, and called at a later time. Recipient objects to whom these functional objects are given can safely execute call the contained function at their own convenience without any direct knowledge of the enclosing host object. In this way, a program can execute chains or groups of functional objects, while safely decoupled from having any direct reference to the enclosing host object. Phone numbers are an excellent analog and can easily illustrate the degree of this decoupling. Some entity provides another with a phone number to call to get a particular job done. When the number is called, the calling entity is effectively saying, "Please do this job for me. The entity receiving the number to call may

have no knowledge of where the number came from e. On the other side, the caller is decoupled from specific knowledge of who they are calling, where they are, and knowing how the receiver of the call operates internally. Carrying the example a step further, the caller might say to the receiver of the call, "Please do this job for me. Call me back at this number when you are finished. Again, the loose coupling or decoupled nature of this functional object is apparent. The receiver of the call-back is unaware of what or who is being called. It only knows that it can make the call and decides for itself when to call. In reality, the call-back may not even be to the one who provided the call-back in the first place. This level of indirection is what makes function objects an excellent technology for achieving loosely coupled programs. Measuring data element coupling[edit] The degree of the loose coupling can be measured by noting the number of changes in data elements that could occur in the sending or receiving systems and determining if the computers would still continue communicating correctly. These changes include items such as: Adding new data elements to messages Changing the order of data elements Changing the names of data elements Changing the structures of data elements Omitting data elements.

6: The Symbolism of Freemasonry: XXXI. The Lost Word

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In February the USAAF decided to discontinue further camouflage painting of its aircraft, and the 2nd Bomb Division devised a system for its Bs whereby the entire tail fin was painted in a color each of its five combat wings was assigned a color and a black or white band placed across the fin either vertically, horizontally, or diagonally to identify the group within that wing. The remainder of the 1st Air Division began using color schemes in September, but each combat wing adopted a different method, depicted in the link below under "External links". The 3rd Air Division, once converted to an all-B command, followed suit in the winter of , employing elaborate schemes which included colored chevrons and bands on the aircraft wings that required months of labor to convert all its aircraft. Those schemes are depicted in the B link below. When two additional groups joined the wing in April , the wing then identified its groups by a letter Y on the uppermost area of the tail fin, superimposed on the symbol previously used in a manner similar to the system used by the Eighth with the new rd BG using a cone-shaped device and the rd BG a five-pointed star that was displayed below the Y instead of underlying it. First B scheme[edit] The more numerous B groups used a standardized scheme for its four bomb wings. On outer tail fins, above and below the aircraft serial, two white circles were painted. In the upper circle was painted a geometric symbol in black denoting the wing, with a triangle for the 47th Bomb Wing, a square for the 55th, a diamond for the th, and a circle for the 49th. The lower circle contained one of the numerals 1 through 4, painted in black, denoting the group. The upper tail surface and circle were red in color. In June, , the Fifteenth Air Force adopted a color-symbol scheme to identify its groups and wings. The 5th Bomb Wing painted the elevators and rudders of its Bs various colors but otherwise maintained its marking scheme. The B wings adopted a method by which color and symbol placement would identify its groups: The former triangle-circle symbol was retained in the upper half. Late in the war the upper rear stabilizer was painted black with a longitudinal yellow band in the center except for the elevators. Upper half of the fin painted red, and a red symbol in the lower half; used the same scheme on the upper rear stabilizer with the red on the right side and the symbol on the left. Large black square in upper half of the fin, lower half painted black with a yellow symbol superimposed. The rear stabilizer generally displayed only the black square outlined in yellow until late in the war, when the entire surface was painted yellow except for the elevators. Large black diamond in the upper half; lower half painted to group color. The rear stabilizer was painted the group color on the left half and had a diamond on the right. Twentieth Air Force tail markings[edit] For a period of six months the Twentieth Air Force operated two bomber commands, each with a different method of identifying its B Superfortress groups. From April forward all twenty groups, organized into five bomb wings, were assigned to XXI Bomber Command, which standardized its markings. The 40th BG painted four horizontal stripes across the upper tail fin with the letter identification of the airplane below it. The th BG numbered its aircraft and placed it within a large blue diamond outlined in yellow on the tail fin. The nd BG painted its rudders but otherwise did not designate the group. The th painted two diagonal stripes on the rudders of its aircraft. When the wing and its groups transferred to Tinian in April the 58th Wing changed to a letter-symbol system. A letter denoting the group was painted on the upper third of the tail fin, with a square symbol in the center, and an aircraft identifier, known as the "victor number," in the lower third. Aircraft commonly used their tail identifiers as radio voice calls call signs , i. Its aircraft used a system identical to that of the 73rd Wing, with its symbol a triangle. In order to quickly mark its increasing numbers of aircraft, the th Wing painted inch black boxes on the tail fins and stenciled the group identifier, either M, O, P or K in BMF inch block letters. The earlier system of marking aircraft was discarded in April by both the 73rd and th Wings. The symbol outline of the th Wing was a circle, that of the 58th Wing a triangle, and that of the th Wing a diamond.

7: Table of Elements in Greek and Latin (Rome) Language.

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Then reset the caps and adjust the loose coupler for a mid BCB station and repeat. Then reset the caps and adjust the loose coupler for a station at the high end and repeat. That should tune out the interfering stations quite a bit and leave the two traps to do the rest as required.

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